U.S. VETERANS HOSPITAL, JEFFERSON BARRACKS, BOILER HOUSE NO. 2
(Veterans Administration Facility, Jefferson Barracks, Building Nos. 70, 70A, & 71)
(Veterans Administration Hospital, Jefferson Barracks)
(Department of Veterans Affairs Medical Center, Jefferson Barracks Division)
VA Medical Center, Jefferson Barracks Division
1 Jefferson Barracks Drive
Saint Louis
Independent City
Missouri

HABS MO-1943-AE
MO-1943-AE

PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

REDUCED COPIES OF MEASURED DRAWINGS

HISTORIC AMERICAN BUILDINGS SURVEY
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HISTORIC AMERICAN BUILDINGS SURVEY

U.S. VETERANS HOSPITAL, JEFFERSON BARRACKS, BOILER HOUSE 2
(BUILDING 70/70A/71)

HABS No. MO-1943-AE

Location: Buildings 70/70A/71, VA Medical Center, 1 Jefferson Barracks Drive, St. Louis, Missouri
USGS Quadrangle Oakville, Missouri
UTM Coordinates 16 7257770 E 9965673 N

Date of Construction: 1952, with a 1965 addition

Designer: Jamieson and Spearl, Architects and Engineers, St. Louis, Mo.

Contractor: Unknown

Present Owner: U.S. Department of Veterans Affairs (VA)

Present Use: Heating Plant

Significance: Boiler House 2 was part of the early 1950s expansion of the U.S. Veterans Hospital, Jefferson Barracks, to accommodate veterans of World War II and the Korean War, and to convert the medical center into a specialized psychiatric treatment facility. Boiler House 2 replaced Boiler House 1 (Building 5), which was built in 1923 and was the original boiler house for the hospital. Boiler House 2 has continued to serve as the heating plant for the medical center since its completion in 1952, and the interior retains original boiler and electrical equipment.

Project Information: This project was sponsored and funded by the U.S. Department of Veterans Affairs as mitigation for the demolition of buildings at the St. Louis VA Medical Center, Jefferson Barracks Division, a property that has been determined eligible for the National Register of Historic Places via consensus determination of eligibility between the U.S. Department of Veterans Affairs and the Missouri Department of Natural Resources State Historic Preservation Office.

Description:

Boiler House 2 (Building 70/70A/71) is one facility with different building-number designations for different parts of the building: Building 70 is the main portion of Boiler House 2; Building 70A is the 1965 chiller wing on the east side of the facility; and Building 71 is the smokestack on the facility's west side.

Boiler House 2 is a brick-clad flat-roofed building with a main floor and a mezzanine level on the interior. Structurally, the building has a mix of brick and block masonry load-bearing walls, while the roof structure is supported by a series of steel trusses. The roofline of the east half of the main portion of Boiler House 2 is slightly taller than the west half. However, the west half contains a long, narrow monitor-like penthouse, which has rows of windows on its east and west sides to provide natural light in the building's mezzanine level. The interior and exterior of the building are highly intact and have fairly few alterations. The interior retains a large amount of original equipment.

Situated on an asphalt lot, Boiler House 2 is located in the northern portion of the medical center complex. Boiler House 2 sits east of Laundry 2 (Building 48) and west of the Cooling Tower (Building 82). To the south, Boiler House 2 faces a grass lawn, an asphalt parking lot, and Graves Street. On the north, the building faces a concrete-paved equipment yard. To the north of the equipment yard is the medical center perimeter fence, and beyond the fence is the Jefferson Barracks National Cemetery.

This description first describes Building 70, which is the original boiler house portion of the building, along with the smokestack (Building 71), which sits on the west side of Building 70. Building 70A, the one-story chiller wing located on the east side of the building, is described last.

Building 70 serves as the main boiler house. The facade (west wall) of Building 70 has yellow brick walls and two flat metal double doors. One set of the doors has three lights on each leaf of the door; the door leaves of the second set do not have windows. The wall also features four long narrow steel industrial windows, two of which are positioned at the edges of the wall above the doors, while the other two are in the center of the wall. The south window is broken up by large steel mullions into twenty-two rectangular panes, but the north window has only twelve panes. The two center windows each have a total of twenty-six panes. Some of the panes in each window are hopper windows that can be tilted inward to allow air into the building. This wall also features a limestone beltcourse below the two center windows, and a thin limestone coping at the top of the wall.

Located on the west side of Building 70 is the smokestack (Building 71), which is built of small, square terra-cotta blocks similar in color to the exterior brick of the main Boiler House. A steel clean-out door at the bottom of the smokestack has an arched top and is

marked "Consolidated Chimney Company, Chicago, Ill." The smokestack is mostly freestanding except that a small steel structure attaches the smokestack to the upper portion of the main Boiler House wall.

The east wall of Building 70 has yellow brick cladding and limestone coping. This wall also features a flat steel door. Fenestration on this wall includes two large steel industrial windows. The south window has twenty-six panes. The north window is broken up into three sections by brick infill and only has fourteen panes. Two large window openings that once contained industrial windows on this side of the building have been filled in with yellow brick. This wall also features an attic row of four small square four-pane industrial windows located just below the roofline.

The south wall of Building 70 has yellow brick cladding with a limestone beltcourse and coping, and two industrial steel windows. Of the two windows, the window to the west is larger and is tall and narrow, extending to the upper level of the building. This west window has twenty-six panes divided by heavy steel mullions. The window to the east is also a steel industrial window with a similar arrangement of mullions, but is smaller and shorter, featuring only twelve panes. There is also a very small four-pane industrial window in the attic level above the east window. Above the four-pane window is a brick flat-roof penthouse; the south wall of the penthouse has one small industrial window.

The north wall of Building 70 contains a projecting bay on the east end of the wall. This projection housed an elevator that originally hauled coal to conveyors on the upper level of the building. The projection is a blank brick structure except for a flat metal door near the bottom. The west portion of the north wall features a tall, narrow metal window that is divided at the middle by a panel of brick. This window has eight panels on its bottom portion, and above the brick divider panel, the window has twelve panes. These windows are divided by heavy steel mullions and are similar to windows on the other sides of Building 70. The north wall has a thin limestone coping similar to what can be seen on most of the rest of the building.

The chiller addition (Building 70A) is a short one-story facility that is attached to the east wall of Building 70. The south wall of Building 70A is fairly plain, with brick masonry, a limestone beltcourse and copings, a set of one-light metal replacement double doors, and one four-pane industrial steel window. The east portion of the wall is much shorter and has yellow brick cladding, a set of three-light steel double doors, and several small steel industrial windows. The east wall of Building 70A has yellow brick cladding, two small four-pane industrial metal windows, and a limestone beltcourse below the windows. The coping at the top of the wall appears to be composed of metal-clad concrete. The north side of Building 70A is one story tall and fairly plain. This wall contains one set of steel double doors and one window. No wall is exposed on the west side of Building 70A because this side of the facility is attached to the east wall of Building 70.

The interior consists of the Main Boiler House (Building 70) on the west and the chiller addition (Building 70A) on the east. The main boiler house is divided into a large room containing three large boilers on the south, plus a series of smaller rooms on the north end that includes a room for electrical generators and smaller office and utility spaces. Both of these rooms also have a main floor and a mezzanine level.

The main floor of the boiler room is a large open space with three large oil-fired boilers. The boilers sit on the west side of the room, and an open space on the east side of the room enables access to the fronts of the boilers. The room has painted concrete floors and a mix of brick and concrete-block walls. The lower levels of the boilers are constructed of brick that has been painted silver. Each boiler has a large steel panel on its lower level; these steel panels are now fitted with pipes and gauges. A blower sits mounted above each of the steel panels. The ceiling of the boiler room sits above the boilers and is described below, as part of the mezzanine level. The main floor of the generator room is similar in construction to the boiler room and contains three small generators sitting on concrete bases.

The mezzanine level of the boiler room is a platform that sits on top of the boilers. The mezzanine floor is composed of a metal catwalk that is suspended above the open floor of the open east portion of the boiler room, and a concrete platform on the west side of the room that sits over the boilers. The ceiling of the mezzanine level is composed of steel trusses and a clerestory with metal replacement windows. The mezzanine level of the generator room has concrete floors and a mix of concrete-block and brick walls, with exposed steel structure for the ceiling. The mezzanine of the generator room contains two water tanks, one large and one smaller, and pipes associated with the water tanks. The chiller addition has concrete-block walls and concrete floors and contains chiller equipment.

History:

The construction of Boiler House 2 is related to a post-World War II conversion of the VA Hospital at Jefferson Barracks from a general medicine facility to a neuropsychiatric hospital. With the end of the war, a large number of veterans required medical and psychiatric treatment, and to address this situation in St. Louis, the VA constructed the John Cochran Hospital downtown for general medicine, and converted the existing Jefferson Barracks facility (south of the city) to a neuropsychiatric hospital. The John Cochran Hospital was built in the late 1940s and early 1950s, while initial new construction and remodeling for the neuropsychiatric facility was carried out at Jefferson Barracks from 1950 to 1952.

1940s Mental Health Reform and Post-World War II VA Neuropsychiatric Hospital Design

The conversion of the Jefferson Barracks facility to a modern neuropsychiatric hospital was related to a wave mental health reform at the end of World War II. Public demands for improved conditions were stoked by a 1946 article in *Life* magazine, written by medical writer Albert Q. Maisel. Entitled "Bedlam 1946: Most of U.S. Mental Hospitals Are a Shame and a Disgrace," the article exposed shocking abuses in mental hospitals.[1] By 1947, as part of an effort to build new VA hospitals, Dr. Paul Haun, a psychiatrist with the VA's Washington D.C. office, developed the "Schematic Plan for a 1,000-Bed VA Hospital," a general plan for psychiatric hospital facilities that recommended the types of buildings to be provided, as well as the number of floors and other details. This plan was publicized in the article "New Trends in Hospital Design," by Haun and Dr. Z. M. Lebensohn, in the February 1948 edition of *The American Journal of Psychiatry*.[2]

Haun's designs emphasized the importance of recreational and occupational training activities, and he tried to reduce the stigma of psychiatric hospitalization by making the facilities resemble resorts or college campuses.[3] He recommended that each psychiatric hospital should have a multi-story admissions and intensive treatment building to handle both the initial observation and diagnosis of newly arrived patients and the various forms of intensive psychiatric treatment that followed the diagnosis. Haun favored the multi-story layout because it allowed doctors quick, easy access to patients and also made it easier to contain the patients and secure the facility. Patients would stay in this building for no more than four to six months.[4] If intensive treatment was not effective, the patient would be transferred out of the admissions and intensive treatment building and into one of several long-term care buildings for continued treatment. In contrast to the admissions and treatment building, Haun recommended that the continued treatment buildings should be low, sprawling structures of only one or two floors, which would allow patients easier passage to outdoor activities, an important part of Haun's treatment philosophy.[5] Although the main focus of the Haun model was on treatment, administrative, and recreational facilities, hospitals modeled after Haun's plan also required appropriate support facilities such as boiler houses, kitchens, and laundries.

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[1] Albert Q. Maisel, "Bedlam 1946: Most of U.S. Mental Hospitals Are a Shame and a Disgrace," *Life,* May 6, 1946, 102-118.
[2] Paul Haun and Z. M. Lebensohn, "New Trends in Hospital Design," *The American Journal of Psychiatry* 104, no. 8 (February 1948): 555-564.
[3] Ibid., 564.
[4] Ibid., 557-559.
[5] Ibid., 555-564.

The Function of Boiler House 2

Boiler House 2 was needed presumably to support the additional heating needs at the VA Hospital that were created by the construction of five major new buildings and several smaller support facilities in 1952. These major facilities were all geared toward converting the Jefferson Barracks facility into a specialized psychiatric hospital. Drawings for Boiler House 2 were drafted by Jamieson and Spearl, Architects and Engineers, of St. Louis, in January 1950, and the building was completed in 1952. Jamieson and Spearl was founded in St. Louis in 1918 when James Jamieson partnered with George Spearl. The firm was notable for designing major buildings at several colleges and universities across the Midwest, including ones at Washington University in St. Louis. Jamieson died in 1941, before the firm did work at the VA Hospital, Jefferson Barracks, but the firm continued to use the name Jamieson and Spearl into the 1950s.[6]

Originally, Boiler House 2 was equipped with three large coal-fired boilers and associated water tanks, blowers, and coal handling equipment. Coal was stored in an outside yard and loaded into a below-grade coal hopper that was covered over with a metal grate. In the coal hopper, the coal was loaded onto buckets that travelled on a conveyor system up to the mezzanine level of the plant, above the boilers. The coal buckets were then transferred to a horizontal conveyor and emptied out into a series of ten coal chutes, which channeled the coal down into the firing chambers of the three boilers.[7]

Some coal-fired boiler plants had machinery to pulverize coal into powder for faster burning[8]; however, drawings for this plant do not appear to include any such machinery. The plant did have a forced-air blower system for the boilers, several water tanks (including a flash tank and surge tank), and a water-softening system to remove minerals from the water that was used in the boilers. The boilers were large masonry structures with the firing chambers below and steel tanks for heating water mounted above. Steam was piped out of the building to provide steam heat for the various buildings of the medical center. A central boiler room made it unnecessary to plan boiler or furnace room facilities in other buildings at the medical center, so more space in those buildings could be devoted to hospital purposes. The construction drawings for Boiler House 2 do not show an elaborate ash-removal system—ash appears to have been removed via clean-out doors on the boilers, and through a large clean-out door on the outside of the smokestack.

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[6] Esley Hamilton, *National Register of Historic Places Inventory Nomination Form for the Washington University Hilltop Campus Historic District*, 1978, on file at the Missouri State Historic Preservation Office.
[7] Jamieson and Spearl, Architects and Engineers, *Construction Drawings for 544-Bed Neuropsychiatric Hospital, New Boiler House,* 1950, on file at St. Louis VA Medical Center, Jefferson Barracks Division, Building 3T.
[8] Hardlines Design Company, *Historic American Engineering Record Documentation of Building 30170, Patterson Field Steam Heating Plant, Wright Patterson Air Force Base,* March 1999, 9.

At an unknown date, the coal-fired boilers of Boiler House 2 were converted to burn oil instead of coal. The coal yard near the building was eliminated, and some coal handling equipment was removed from the building. In 1965, an addition, designated with the building number 70A, was constructed on the east side of Boiler House 2 to accommodate cooling-tower equipment that provided additional chilled water for cooling purposes in the boiler house.

Other than the conversion of the boilers to burn oil and the addition of Building 70A in 1965, the building has changed little. All windows were replaced throughout the building in 1983 as part of a multi-building window replacement project on the campus.[9] A freestanding cooling tower facility (Cooling Tower, Building 82) was built on a site east of Boiler House 2 in 1989.

Boiler House 2 is currently used to heat buildings at the VA Medical Center through a system of underground steam pipes. However, upcoming redevelopment plans call for Boiler House 2 to be demolished along with Laundry 2 (Building 48, currently the National Media Development Building) and the Cooling Tower (Building 82). Once Boiler House 2 and the other buildings are demolished, the site will be turned over to the adjacent Jefferson Barracks National Cemetery for conversion to burial grounds as part of an ongoing cemetery expansion project.

Sources:

Hamilton, Esley. *National Register of Historic Places Inventory Nomination Form for the Washington University Hilltop Campus Historic District*. 1978. On file at the Missouri State Historic Preservation Office, Jefferson City.

Hardlines Design Company. *Historic American Engineering Record Documentation of Building 30170, Patterson Field Steam Heating Plant, Wright-Patterson Air Force Base*. March 1999.

Haun, Paul, and Z. M. Lebensohn. "New Trends in Hospital Design" *The American Journal of Psychiatry* 104, no. 8 (February 1948).

Jamieson and Spearl, Architects and Engineers. *Construction Drawings for 544-Bed Neuropsychiatric Hospital, New Boiler House*. 1950. On file at St. Louis VA Medical Center, Jefferson Barracks Division, Building 3T.

[9] U.S. Veterans Administration, Construction drawing files for Building 70, St. Louis VA Medical Center, Jefferson Barracks Division, 1950-2010, on file at St. Louis VA Medical Center, Jefferson Barracks Division, Building 3T.

Maisel, Albert Q. "Bedlam 1946: Most of U.S. Mental Hospitals Are a Shame and a Disgrace." *Life*, May 6, 1946.

U.S. Veterans Administration. Construction drawing files for Building 70, St. Louis VA Medical Center, Jefferson Barracks Division. 1950-2010. On file at St. Louis VA Medical Center, Jefferson Barracks Division, Building 3T.

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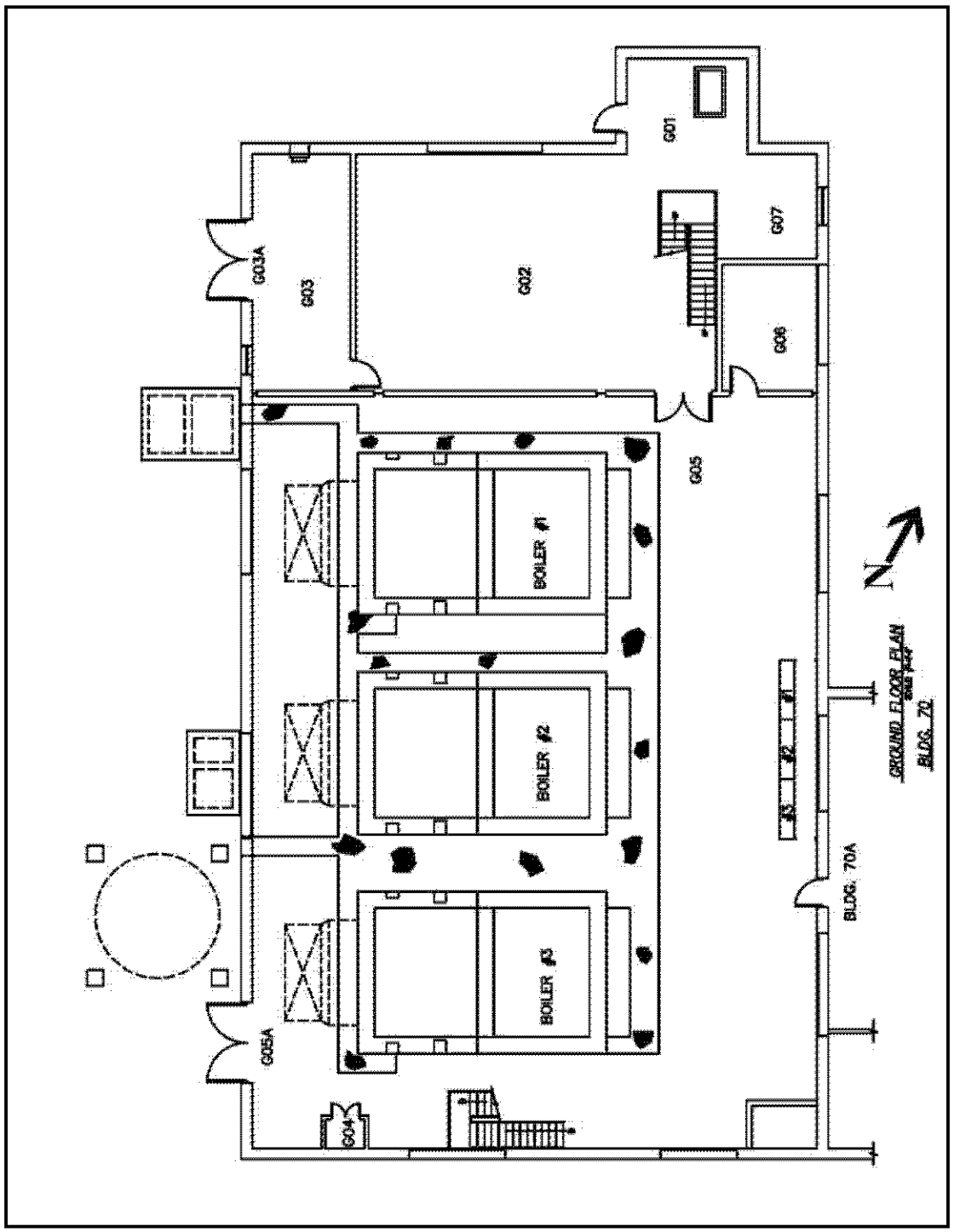
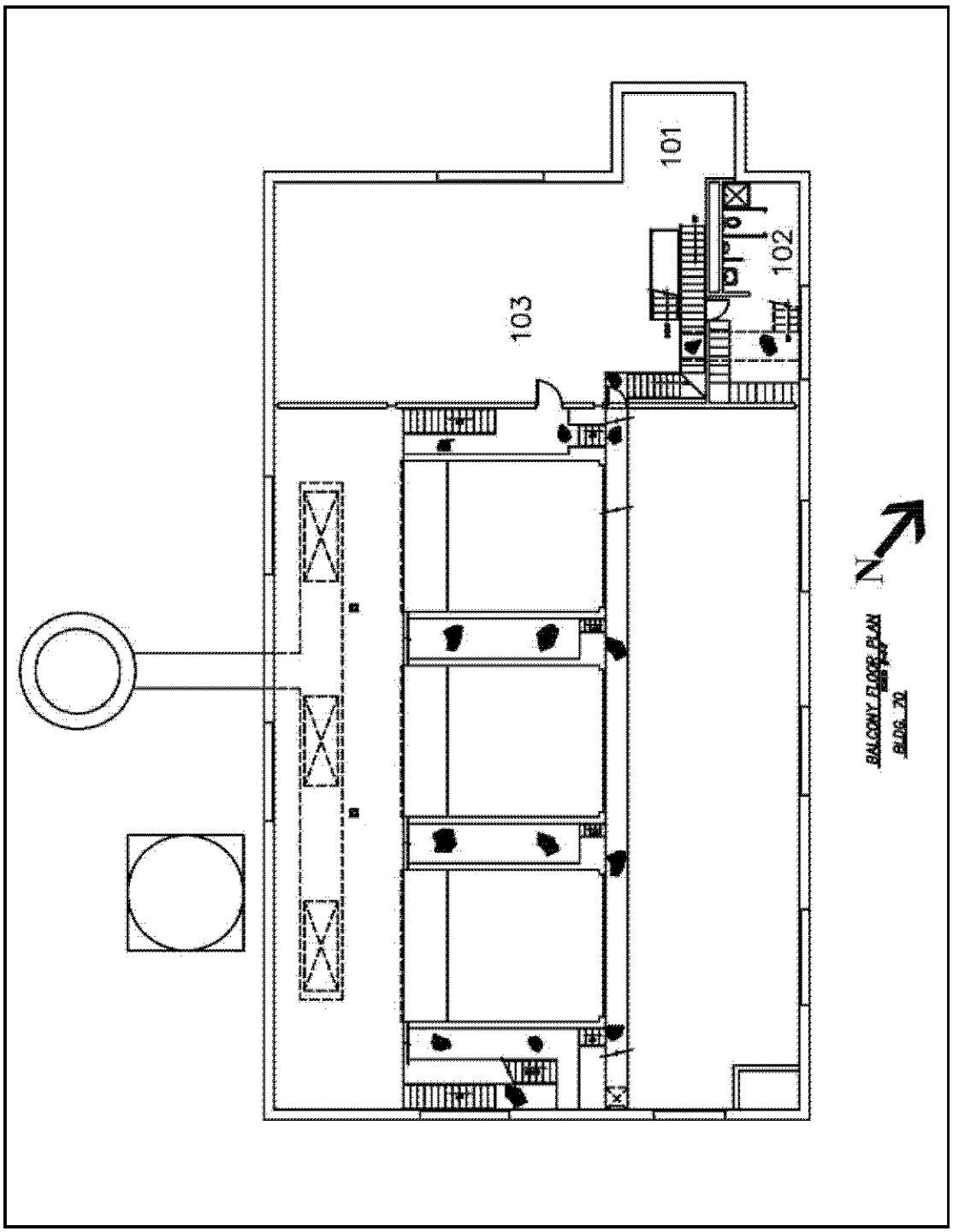
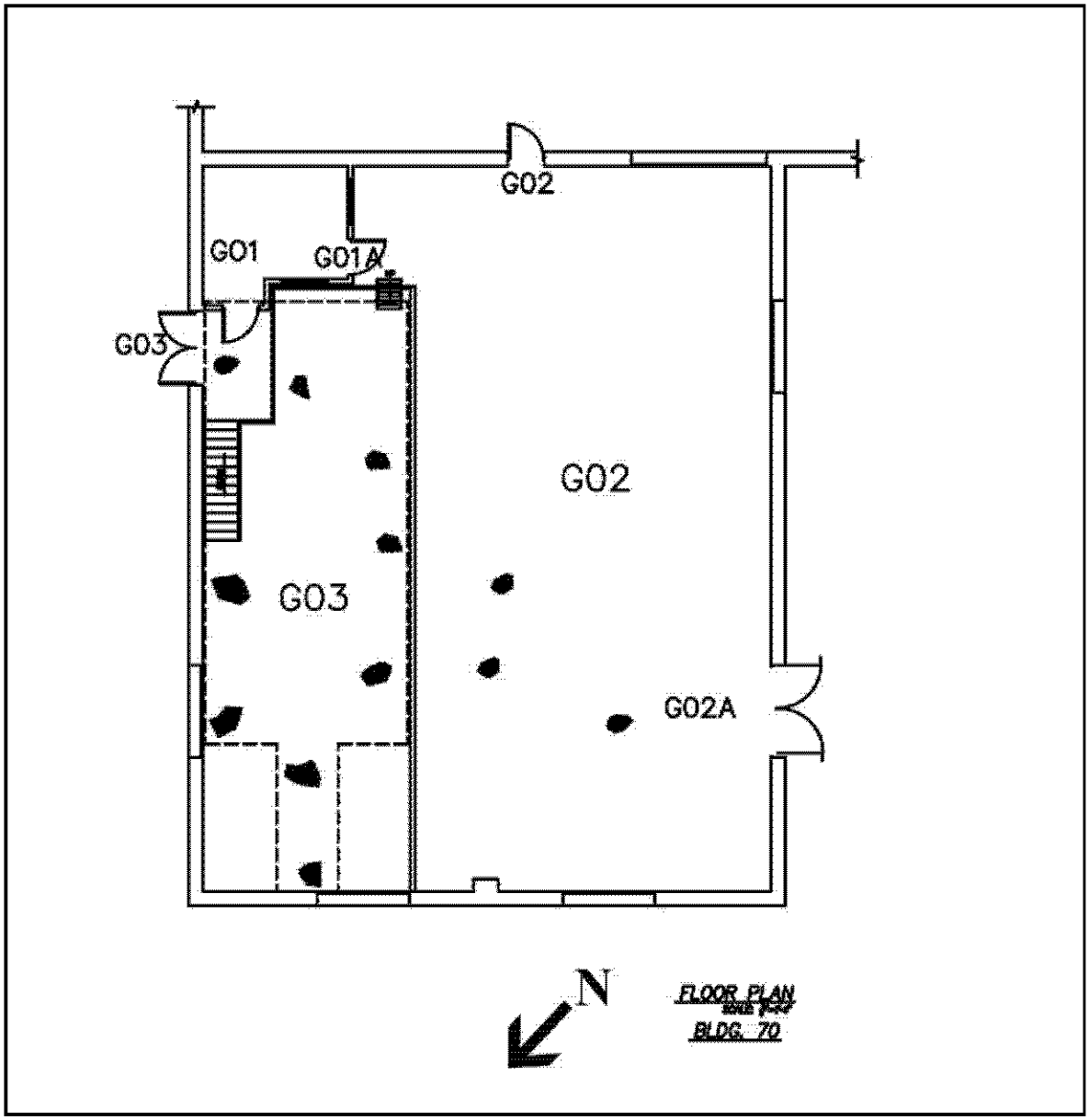


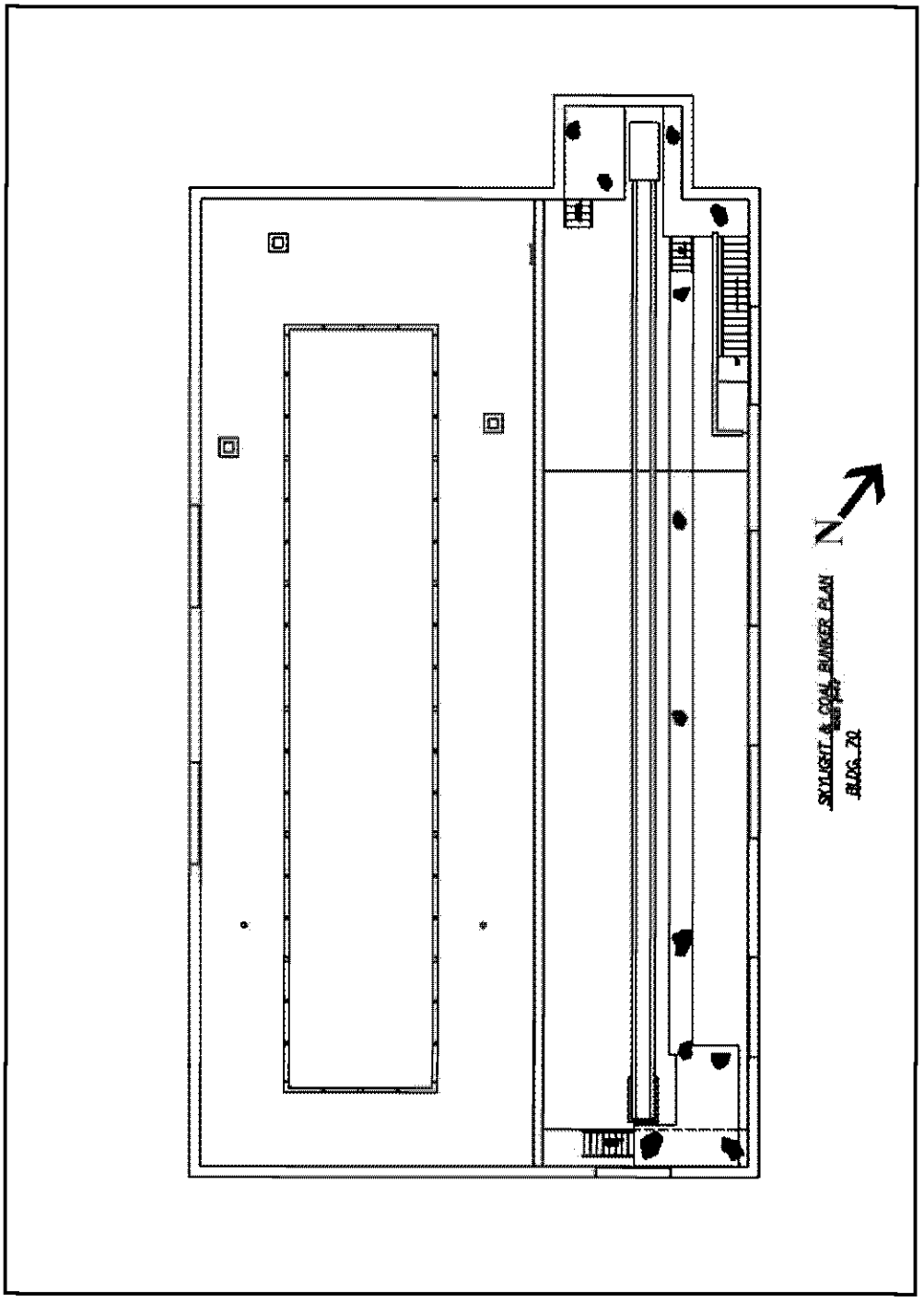
Boiler House 2 (Building 70/70A/71), current floor plan for ground floor of Building 70, also showing Building 71 (smokestack)



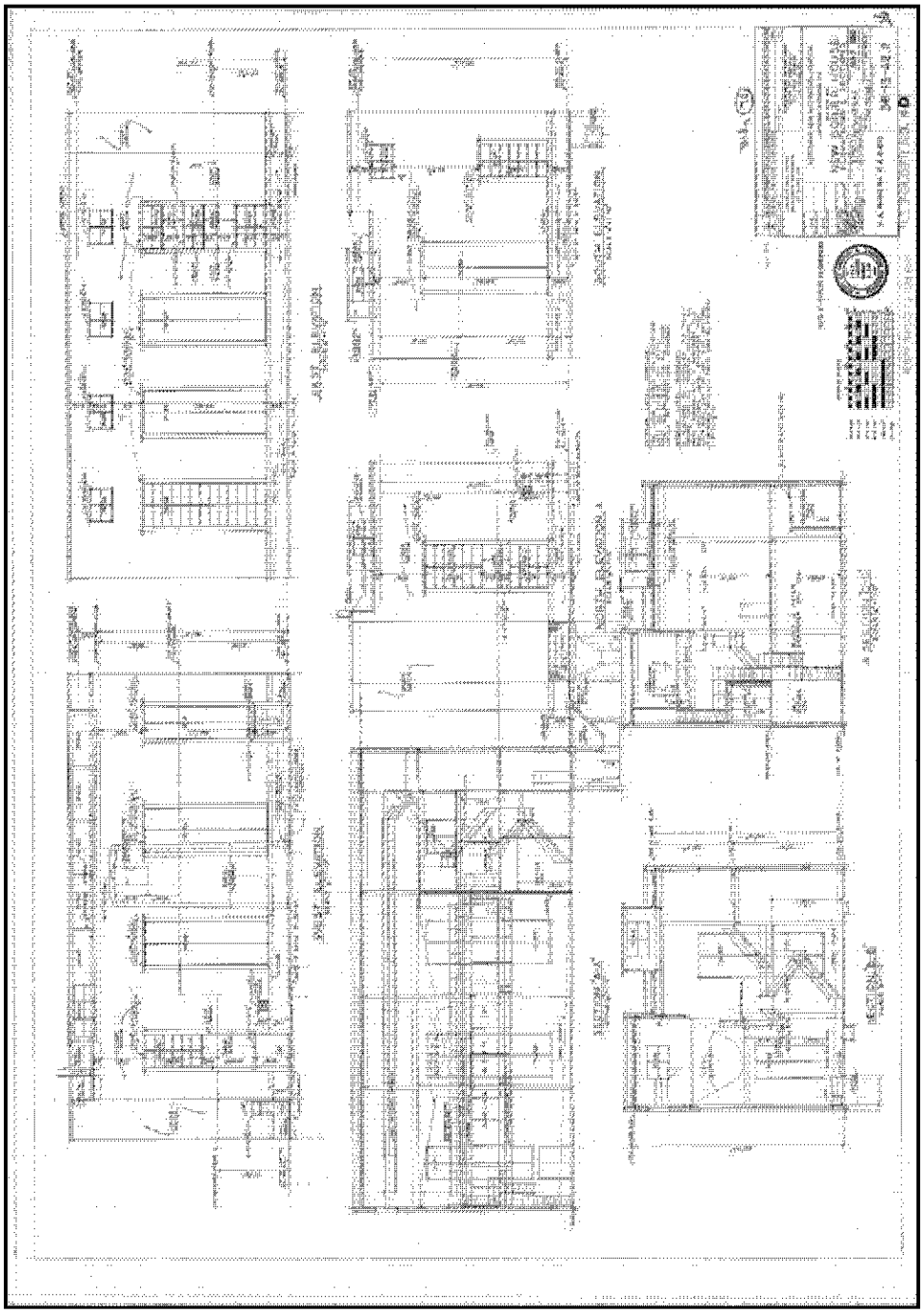
Boiler House 2 (Building 70/70A/71), current floor plan for balcony of Building 70, also showing Building 71 (smokestack)



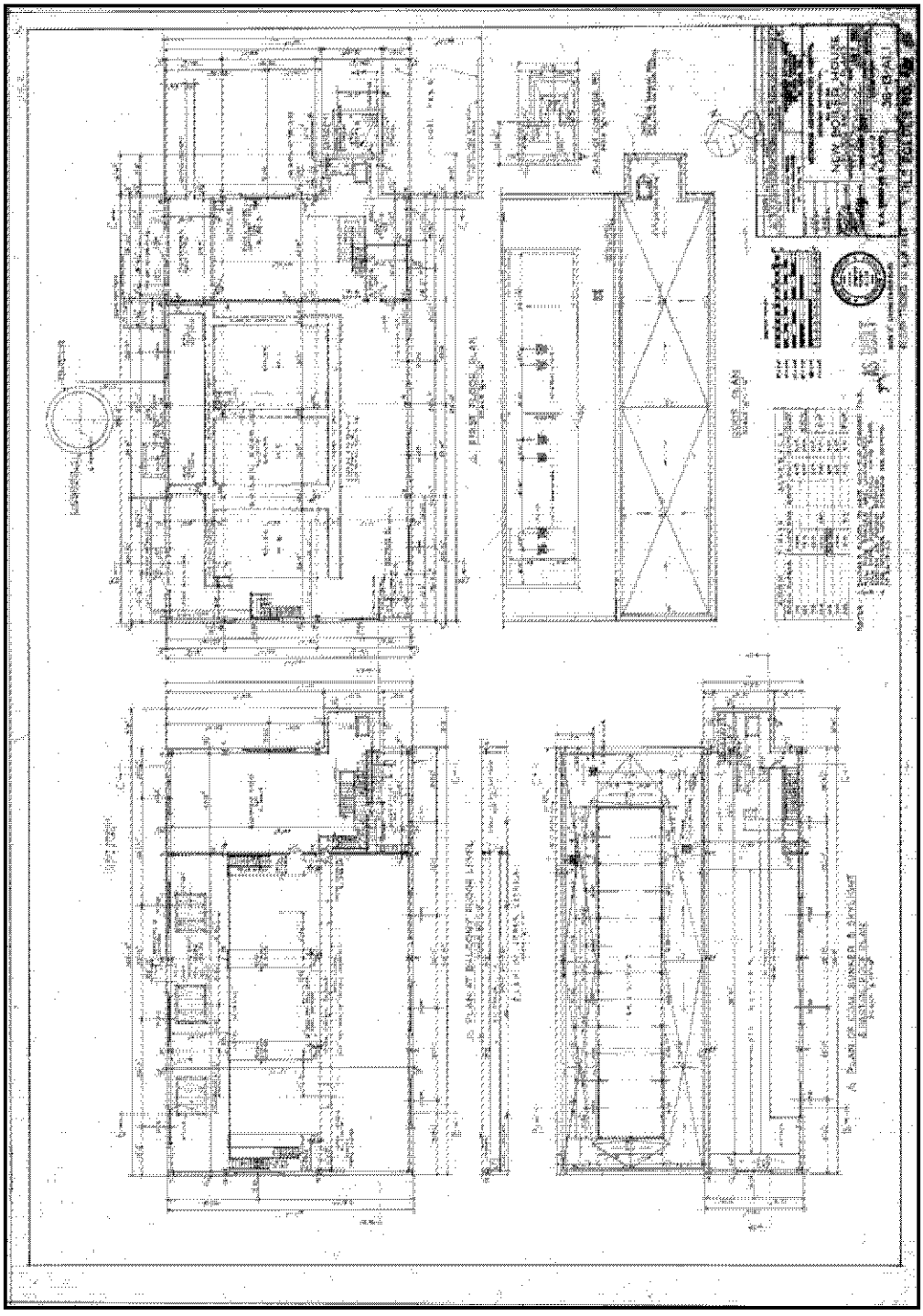
Boiler House 2 (Building 70/70A/71), current floor plan for Building 70A



Boiler House 2 (Building 70/70A/71), current plans for skylight and coal conveyor, Building 70



Original elevations and sections, Boiler House 2 (Building 70), 1950



Original plans for the Boiler House 2 (Building 70), 1950